



Pacific Partnership Initiative on Sustainable Water Management

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Welcome to the twentieth official mail-out of the Pacific Partnership Initiative on Sustainable Water Management. This Quarterly Newsletter provides Water and Sanitation information to Pacific member governments, professionals, NGOs, CBOs, researchers, private sector and counterparts in the donor community who are interested in water sector issues and initiatives.

We would appreciate your assistance in forwarding the newsletter to other colleagues who may be interested in this initiative so that it reaches the widest possible audience.

If you wish to print this newsletter, a PDF version is also available on the new SOPAC Water website:

www.pacificwater.org/pages.cfm/water-governance/pacific-partnership-initiative/e-newsletter-subscription/

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5th World Water Forum to be held in Istanbul, Turkey

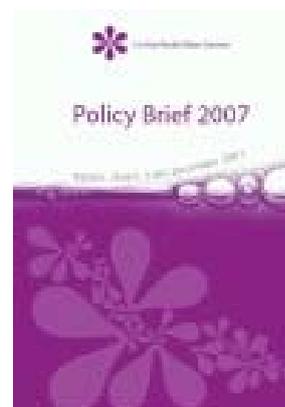
The Coordination Unit of the Pacific Partnership Initiative on Sustainable Water Management is the focal point for the Oceania component of the Asia-Pacific Water Forum, and has been asked to assist in drafting and finalising the Pacific sub-regional part of the Regional Position Paper for Asia and the Pacific, which is to be presented at the 5th World Water Forum, 16-22 March 2009 in Istanbul, Turkey.

The 3rd Progress Report of the Pacific Partnership Initiative on Sustainable Water Management, presented at the Partnership Steering Committee in Apia, Samoa (September, 2008) served as a discussion document for the Pacific Position Paper for the World Water Forum (5WWF)



allowing the Pacific region's stakeholders in water and sanitation to reflect on the strategic developments over the past 3 years. Inputs to the final version of the Pacific position paper were provided through the Science, Technology and Research network (STAR) Water Working Group meeting in November 2008 in Tuvalu in association with SOPAC's 37th Annual Session as well as other regional water and wastewater consultations and meetings. Dr Jan Gregor of ESR has been so kind to provide support in finalising the document which will be presented under the Asia Pacific Regional Theme at 5WWF.

Following the Pacific Leaders' attendance at the 1st Asia-Pacific Water Summit hosted by Japan in Beppu at the end of 2007, the Ministerial Conference to be held at 5WWF will provide an opportunity for politicians and elected officials from Pacific Island Countries, not only responsible for water, environment, agriculture or energy policies, but also for finance or other domains, to take part in the political process of the Forum.



Of particular interest for Pacific Island Countries are the following events:

- the presentation of Guidelines for Water Management in Islands, Coastal and Isolated Areas by the Pacific Economic Cooperation Council (PECC) on 16 March
- session 3 on 'Local Actions' under topic 1.1 "Adapting to climate change in water resources and water services: understanding the impacts of climate change, vulnerability assessments and adaptation measures" by CPWC, IWA, WWC and IUCN on 17 March
- the presentation of the Asia-Pacific Regional Document by the Asia-Pacific Water Forum Secretariat on 20 March



Pacific attendees to the 5th World Water Forum can contact the SOPAC Secretariat to obtain further information on papers, presentations and contributions relevant to small island countries. The sub-regional paper as well as other related 5WWF documents can be downloaded from the following link:

www.pacificwater.org/pages.cfm/news?newsid=5th-world-water-forum-16-22-march-2009
www.worldwaterforum5.org/

For detailed information on the Summit please visit:

www.worldwaterforum5.org
www.apwf.org/press/ or [contact](http://www.apwf.org/contact)

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For further information on 5th WWF documents, please contact:

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Website: www.pacificwater.org/pages.cfm/news?newsid=5th-world-water-forum-16-22-march-2009





New Advisory Center to Improve Pacific Infrastructure

MANILA, PHILIPPINES (15th January 2009) – A partnership of government and international development agencies today announced the establishment of a new advisory center to assist in improving infrastructure and services in Pacific Island nations.



The Pacific Infrastructure Advisory Center will analyse, plan, and provide technical assistance to help Pacific countries develop sustainable infrastructure and services that support national development goals.

The Advisory Center is the initiative of the Australian Government, New Zealand Government, the Asian Development Bank and the World Bank Group including the International Finance Corporation. ADB will establish and manage the Center from the ADB Sydney office at a cost of \$2.4 million.

The Center is the first key component of support to be provided under the new Pacific Region Infrastructure Facility (PRIF), announced in August 2008.

The PRIF aims to coordinate donor assistance to develop and maintain critical infrastructure in the Pacific, increasing economic growth, creating jobs, and better linking urban and rural areas to basic social services. PRIF partner agencies will provide up to \$200 million for infrastructure development in the Pacific over four years.

In accordance with the Paris Declaration on Aid Effectiveness, the Advisory Center will produce strategies, policies, and project designs which PRIF partner agencies and other stakeholders can support. This will help ensure that assistance provided through loans, grants, and private sector participation, is effective and meets the needs of Pacific people.

Source: ADB Website

www.adb.org/Media/Articles/2009/12770-pacific-infrastructure-advisory-center/default.asp

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High Waves strike Majuro

Our government declared a state of emergency after DUD Area in Majuro was inundated by high waves during high tides for the two days that displaced hundreds of residents and caused damage to homes and other properties. Also the high waves caused significant coastal erosions on the ocean site in which many family cemeteries were destroyed. At least 600 family members were placed in shelters.

The dire situation caused by the high waves was well contained and managed as the members of the National Disaster Planning Committee took lead in their effective planning and coordinating the works in setting up shelters, managing vehicle traffics to allow quick response of the rescue vehicles to affected areas, and smooth delivery of goods to the people in the shelters. The Disaster Coordinating Committee did an excellent job. The ministries who are members of the Disaster Committee performed their duties professionally. RMIEPA was quick not only to issue public notices of water borne diseases but also treated the drinking waters in the shelters and at the homes in the affected areas.



The success story of the National Disaster Committee to minimize confusions and little damage to life and property was made possible because of the good training the members received during the development of the National Disaster Plan conducted by staffs from SOPAC.

Later the committee received reports that other outer islands of Ebeye, Namu, Lib, Ujhae and Lae were also affected. A survey team from both government and the US Agencies were scheduled to depart this weekend on the Patrol Boat to assess the damage.

The rainfall throughout most of the atolls of the Republic of the Marshall Islands was below normal during the 3rd Quarter of 2008. The 3-month total of 26.36 inches at Majuro Atoll, in the central RMI, was 71% of its normal rainfall. In the northern RMI, Kwajalein Atoll was dry with 85% of its normal 3-month total; Jaluit Atoll was even drier, having only received 45% of its normal 3-month total. Because we are now in the wetter months of the year, the municipal water supply on Majuro (a rainwater catchment system that collects water from the airport's runway) should remain at or above adequate levels.

According to the U.S. Climate Prediction Center (CPC), the present oceanic and atmospheric anomalies are consistent with the continuation of ENSO-neutral conditions in the tropical Pacific.

For more information on the story above, please contact:

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Updates on the Recent Flooding in Fiji



In Fiji, a tropical depression passed the group on Thursday 8th January. Prolonged rainfall periods resulted in flooding in major towns in the Western and Northern division. The Western division was declared a state of emergency. As of 15th January there were 11 reported deaths, from drowning and being buried in landslides.

Essential services such as power and water supply were disrupted and a sewerage pipe burst open due to a bridge collapse in one of the affected towns. The increase of water borne diseases is a potential risk from contaminated water sources, particularly in the western division. Much damage has been to the agriculture sector with damages to crops.

Initial damage assessment by the Fiji National Disaster Management Office (NDMO) estimate damages as at 15th January to be around F\$20 million. SOPAC has been requested by the Fiji Government to provide support to Fiji for a post-flooding technical assessment.

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Kadavu promotes Integrated Water Management



IUCN's Water and Nature Initiative (WANI) is heading a joint initiative to assist the people of Kadavu Island in Fiji achieve their vision for restoration, protection and sustainable use of their precious natural resources.

The Water Initiative builds on earlier marine management efforts of Nakasaleka tikina (district) on Kadavu to better manage their marine resources. Referring to their natural resources as "living wealth" or yaubula, the people of Nakasaleka tikina had earlier developed a marine resource management plan for their qoliqoli (fishing area). The WANI input will strengthen this plan by integrating land-based threats to the island's marine resources.

Work on Kadavu commenced in July 2008 with a preliminary workshop to identify and assess land-based threats to Nakasaleka's key natural resource bases (fisheries, forest and water catchment). The assessment initiative was a joint partnership between IUCN, the Institute of Applied Science and the Kadavu Yaubula Support Team. Birdlife International, and other Government Department representatives contributed to the workshop. All the villages within the tikina were represented and participated in the assessment work. Over the 3 days the 57 participants from the district of Nakasaleka and Yale and 7 facilitators shared their expectations of the workshop.





"It is often not possible to bring together so many different organisations to work on a common objective," says Luisa Tagicakibau, Project Assistant for the IUCN Oceania Water and Nature Initiative. "The input of IUCN has made this possible and we have great hopes that we can all work together on this project to protect common natural resources using more integrated and holistic approaches to conservation".

WANI advocates a "ridge to reef" approach to conservation, seeking to identify and address land-based threats to the marine environment while also helping to address water management issues in communities. As many coastal communities rely on marine resources for their livelihoods, their community-based conservation efforts have tended to focus mainly on direct threats within the qoliqoli (fishing areas). WANI partners are interested to look beyond Kadavu.

"Other important threats to coastal fisheries resulting from poor management of catchment areas further upstream are rarely considered when addressing coastal fisheries," says Philippe Gerbeaux, Chief Technical Adviser and WANI Project Leader at the IUCN Oceania Regional Office. "We hope to help improve the overall management of coastal marine resources by enabling communities to apply a more holistic approach to natural resource management."

A similar approach is being developed at one site in Samoa, also under WANI, in collaboration with the Water Resources division of the Ministry of Natural Resources and Environment. It is also hoped that the lessons learnt from these demonstration sites can be used in the GEF – funded Nadi Catchment site and IUCN is particularly interested to support the establishment of a management committee.

A first phase of the global Water and Nature Initiative of IUCN has been running for over 6 years in other parts of the world and is now entering in a second phase that is including the Oceania projects. The ultimate goal of WANI 2 is "the mainstreaming of ecosystem services into water management, planning and policies, to support a sustainable use of water resources for poverty reduction, economic growth and protection of the environment".

For further information on the article above please contact:

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Website: <http://cms.iucn.org/where/oceania/index.cfm>

Agencies Work Together for Sustainable Piggeries, American Samoa

Piggery owners on the island of Tutuila in American Samoa have seen many developments in the past year as farmers seek alternative pig management techniques to comply with local land use regulations. This movement toward compliant piggeries has occurred for a variety of reasons:

- Public health concerns about diseases such as Leptospirosis
- Faecal contamination and nutrient loading that threaten our soil, surface water, and groundwater
- Concerns for our beaches and coral reefs from piggery runoff
- Public response to foul-smelling piggeries in close proximity to homes and recreational areas
- The prevalence of mosquitoes, flies and other disease-carrying vermin that are attracted to piggery wastewater

As a result, many local agencies have been working together to promote sustainable piggery practices that will preserve the health of the people, the pigs and the environment of American Samoa. Partnering organizations include the American Samoa Soil and Water Conservation District (AS-SWCD), American Samoa Community College (ASCC) Land Grant, Natural Resource Conservation Service (NRCS), American Samoa Environmental Protection Agency (AS-EPA), American Samoa Power Authority (ASPA), Department of Agriculture (DOA), and Coral Reef Advisory Group (CRAG).





The Good News



When pig waste is properly managed, it can become a valuable agricultural resource. "Pig farmers that upgrade their piggeries and begin making compost out of pig manure will find a financial windfall in that they will be able to sell it to vegetable farmers or will be able to use it in their own plantations to increase production," says Larry Hirata, Agricultural Educator at ASCC Land Grant. At Land Grant, the public is invited to view a variety of agricultural demonstrations that utilize pig manure as a soil amendment.

Before applying it to crops to soil, pig waste must be converted to compost. This is done by mixing in a dry carbon source such as wood chips, keeping the mixture properly ventilated, and controlling moisture. Athena Pratt, a Conservationist with NRCS invites farmers to use their agency as a resource. "We encourage farmers to work with NRCS for soil testing and nutrient management plans. We can help farmers manage animal waste in a way that nourishes our plants and soil, and protects our water resources."

ASCC Land Grant Introduces the Portable Pig Pen



The trick is to take the water out of the pig waste management process. As an example, ASCC Land Grant currently operates a demonstration "Portable Piggery." Instead of washing out the waste each day, wood chips are simply added to the floor of the pen, and keeps pigs dry and comfortable. Pigs enjoy rooting and turning the bedding which facilitates the aeration and decomposition of the waste. When the composting material builds up, the pig pen is moved and the waste can be composted in place or moved to compost bins for further decomposition.

Over 25 local farmers have already applied for Land Use Permits to build portable pig pens that will comply with local regulations. "The portable pig pen is the most affordable piggery design available in American Samoa," says Brian Rippey a civil engineer with AS-SWCD who provides free design services to local piggery owners. "By keeping the pen dry and adding wood chips, you can dramatically reduce waste odors and the pigs stay healthy and happy."

To maintain a supply of wood chips, Land Grant operates a portable wood chipper near the piggery. Farmers with tree clippings can talk to Land Grant extension agents to perform wood chipping services at their property. In addition, Fofoga Electrical Services Inc. has recently collaborated with AS-SWCD to install a wood chipping facility and storage shed in the Tafuna industrial park, where farmers can purchase truck loads of wood chips for an affordable price.

This fall, additional piggery demonstrations are also planned for construction at ASCC Land Grant. This will include a Dry Litter piggery on a permanent concrete foundation, and compliant variations to the traditional Wash-Down system.

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Measuring Tupapa Stream flow, Rarotonga, Cook Islands



The Tupapa Catchment on Rarotonga is a medium sized catchment supplying high quality potable water from an off-take on the Tupapa Stream to the ring main surrounding and supplying Rarotonga.

To better assess the catchments hydrology and sustainable yield, Pacific HYCOS funded the installation of a streamflow station to allow stream flows to be measured on a continuous basis. The station was installed by the Department of Water Works staff under HYCOS supervision in December 2008 over a one week period. The catchment is typically densely forested, rocky and steep but was ideal in its lower reaches for the installation of a stilling well and hydrologger above the water supply intake.

A program of streamflow measurements also commenced allowing for the streamflow discharge rating to be developed over the next several months. Staff capacity development is an ongoing part of such installations.

The Avana streamflow station installed under HYCOS support in April 2008 is operating with no problems. The equipment is different to that of the Tupapa in that it uses a Pumpro and bubbler system to measure the water levels, negating the need for a stilling well. A provisional rating curve is being developed through regular discharge measurements. Already the data collected is allowing the water managers to better assess the available resource and manage the water reticulation system accordingly. As can be seen from the attached graph, a 4 month period of low catchment runoff was experienced from June to September, in which period Rarotonga's water supply dropped to very low inflows. As the streamflow dataset grows over the next several years, low flow events such as these can then be better assessed, ranked and assigned return periods. For example, how often can a 4 month low flow period such as this be expected. This can only be determined by long term data and a minimum of 10 years continuous data is generally necessary in order to undertake this type of analysis.

The Cook Islands continue to operate and maintain the stations installed under NZAid funding and now the HYCOS to a high operational standard allowing with increasing degrees of confidence, the data to be used for future water related studies. Currently the Cook Islands have 5 automatic stream flow stations, 7 automatic rainfall stations and a number of gauge board sites which are gauged in times of low flows.

For further information on the Tupapa Stream in Rarotonga, please contact:

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Protecting Water Quality in the Federated States of Micronesia

'As a water supply professional what I am most concerned about is providing safe clean water', said Leerenson Ariens, General Manager of Pohnpei Public Utilities Corporation, 'This doesn't just mean ensuring what comes out of the tap is safe and clean to drink but also means we need to understand better how poor management of our forests and soil can adversely affect the water in our taps. It is something people do not generally think about'.

Under funding from the Global Environment Facility (GEF) and the European Union, the Pacific Integrated Water Resources Management Programme will support activities designed to improve freshwater quality as part of a project focusing on Ridge to Reef approaches, designed to protecting water quality from the source to the sea. The Federated States of Micronesia (FSM) comprises of 607 small islands in the Western Pacific, approximately 4000 km southwest of Hawaii and lying just above the equator. With a total land area of around 700 square kilometers, FSM occupies more than one million square miles. It is divided into four states: Chuuk, Pohnpei, Yap and Kosrae.

As a result of high population growth rates, urbanization, deforestation, economic development and the resulting increase in pollution of water resources, there is a decrease in water availability per capita in the Federated States of Micronesia, directly affecting the development and quality of life of its people.

The major water resource management issues for FSM include (1) sanitation and wastewater pollution problems, (2) deforestation-related problems such as high sediment volumes in rivers which affect water quality for drinking and can smother coral reefs with soil from fields, and (3) a lack of awareness of water-related diseases, hygiene and sanitation. Previous work funded by the GEF highlighted that the two main areas of concern were poor sanitation systems and practices potentially leading to ground, surface and marine water contamination; and the deforestation of watersheds leading to sedimentation within the lagoons.



Forests are cleared primarily for the cultivation of sakau (*Piper methysticum*). Although this creates employment and is an important livelihood provider, cultivation of sakau, especially on steep slopes can result in the precious top soil being washed away into the rivers, and ultimately the sea. This can damage sensitive downstream areas such as mangroves and coral reefs, in turn affecting biodiversity, and the quality and quantity of fishstocks.

The GEF funded project aims to use a ridge-to-reef approach, driven by local community and NGO involvement, to improve water quality and promote sustainable integrated water and wastewater management through four components:

1. **Watershed Protection and Improvement** - through surveying watershed reserves, implementing an improved monitoring process and local management, and enhancing outreach and education programmes about sakau cultivation and avoiding steep slopes;
2. **Protecting Fresh and Marine Water Quality** - by assessing pollution sources and working closely with communities to mitigate these problems.
3. **Water Safety Planning** - through the establishment of a water safety plan compliant with Pohnpei Environmental Protection Agency standards; and,
4. **IWRM Policy Support** - through a specific component of the project designed to improve the institutional framework and human resource capability in natural resource management.

Pohnpei was identified as a hotspot for these problems; however the outcomes and process of this project will benefit not only the other states within the Federated States of Micronesia, but the entire Pacific Region, with many others preparing to implement similar projects through the Pacific IWRM Programme.

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Creating Water and Wastewater Solutions for the Funafuti Community, Tuvalu

The Global Environment Facility will support the development of Integrated Wastewater Management approaches in Tuvalu as part of the regional Pacific Integrated Water Resource Management programme.

Tuvalu consists of only 9 atoll islands, with a total land area of 26 square kilometers spread over an area of 1.2 million square kilometers of the Pacific Ocean. With an estimated population of 12,000, half of which live in the capital Funafuti, you can imagine that waste, and what to do with it, is pretty important when you share each square kilometer with 1,599 other people.



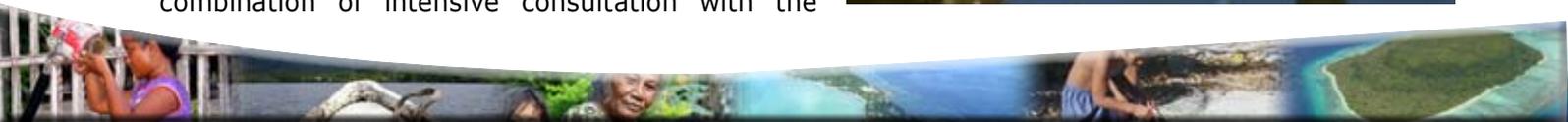
And wastewater is not the only problem. Tuvalu is heavily reliant on rainfall as the only source of water. With atolls having a low storage capacity for freshwater, poorly constructed rainwater harvesting systems, and improvements required in water and wastewater management at the household level, water really is the most precious resource for Tuvaluans. When rainwater supplies are depleted communities depend on the government to transport water to their homes from national rainwater reserves. Groundwater has always been used as a non-potable source of water in areas where groundwater salinity is too high. Under current funding from the EU, 150 ten thousand litre water tanks have been provided to help promote community self sufficiency and provide freshwater reserves for households during drought periods.

Previous work identified that rainwater systems could become contaminated from dust and animal droppings on roof areas. Furthermore, poor sanitation practices result in sewage and animal waste contaminating the groundwater and surrounding lagoon especially on Funafuti Atoll where the population is so concentrated. The influx of nutrients from sewage and animal waste promotes the growth of algae in the lagoon, and has severely degraded the reef on the ocean side. This has a direct impact on fish habitats, stocks and biodiversity, which in turn has an effect on the availability and quality of fresh fish.

A national septic tank audit revealed that 96% of tanks were inadequately designed to operate as required to treat household inputs, and to prevent groundwater contamination. At the moment, when septic tanks are full they are emptied into a hole dug beside the tank – and this may cause further risks to household health, and obvious risks to groundwater quality. Through an earlier GEF funded International Water project, the simple addition of dye to toilets, and the appearance of this dye in groundwater people were using for drinking demonstrated the need to really understand the need for protecting your water resources, especially when water is so crucial to survival on an atoll where rainwater is all you have.

The GEF funded Integrated Water Resource Management project aims to address some of these issues through three approaches:

1. Institutional Strengthening- through development of an National Integrated Water Resources Plan, a National Water and Sanitation Committee, and a revision and enactment of the Water Resources Act for Tuvalu – in an attempt to try and identify some of the cause and effect issues of poor water management in Tuvalu and identify options to reduce pollution;
2. Reduction of threats to public health and the environment from sewage pollution- through a combination of intensive consultation with the





Funafuti community, the development of a sustainable sludge disposal and treatment system, and cooperation and consultation with the Kaupule (Island Council) on all issues; and,

3. To enable households to sustainably manage their wastewater- by providing trial technology such as dry sanitation technology to volunteer households along with practical training, and constructing as well as arranging the management of a composting toilet for demonstration purposes at the household level.

The project, starting now will help the communities in Funafuti make better, more informed decisions, and have the necessary skills to protect their groundwater and marine environment, and to conserve and sustain their precious freshwater supply.

For more information on the story above, please contact:

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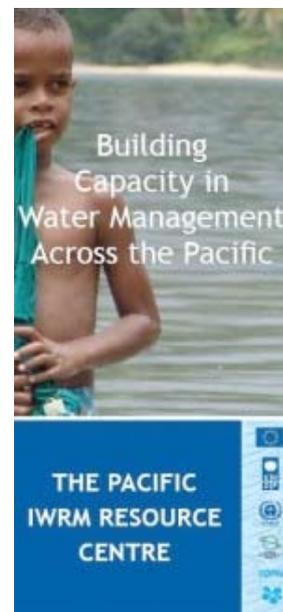


Integrated Water Resource Management (IWRM) Resource Centre

A highlight of the revamped Pacific Water website is the IWRM Resource Centre dedicated to assisting Pacific Island Countries to develop and implement National IWRM and water use efficiency plans, processes and partnerships. Although the initial design of the Resource Centre is focused on IWRM, in time it will encompass resources relating to other issues in water management as well.

Key features of the Resource Centre to date includes direct access to SOPAC Publications and Documents, IWRM Toolkits and other links whilst also hosting dynamic search options such as the Pacific Action Matrix and the Search Links and Resources facility.

A major attribute of the Resource Centre are the IWRM toolkits that have been carefully developed to help guide Pacific Island partners through the IWRM process. The fourteen toolkits cover a range of topical areas which have been identified on the basis of country needs and these include the National Water Apex Bodies, the IWRM Planning process, Stakeholder engagement, Engaging media/youth, IWRM and Gender, institutional reform, policy, legislation and water use efficiency. Each of these toolkits contains concepts, case studies and other pieces of information on the topic to help users navigate their way through the IWRM process.



This informative and interactive Resource Centre can be accessed by all from <http://www.pacificwater.org/pages.cfm/resource-center/> and is now fully functional and ready for use.

We look forward to receiving any feedback you might have.

For further information on the website, please contact:

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Regional and Country Scale Water Resources Assessments

A recent report on Regional and Country Scale Water Resource Assessment: Informing Investments in Future Water Supply in the Asia Pacific Region – a Decision Support Tool describes the initial stage of the development of a transparent and valid decision-making process for targeted interventions in water and sanitation by Australia. The project provides a basis for collaboration and integration of effort between AusAID and Australia’s leading scientific and industrial research agency, CSIRO to enhance the efficiency and effectiveness of investment strategies.

Factors affecting water management have been integrated using the Water Needs Index methodology which is a modified version of the Climate Vulnerability Index previously developed by well-known water researchers on the basis of several years of dialogue and interaction with water professionals around the world.

The research project is designed to allow for easier access to reliable data sources and information, knowledge management and encourage collaborative efforts with water managers in partner countries. The methodology incorporates a prototype software system with a geographical information system, a database system and a user interface. Future developments would involve a fully functional web based system to support and coordinate data information and collection with donor countries. Three case studies have been undertaken to test the suitability, scale and general application of the decision support tool. The first case study is at the national scale for 29 countries in the Asia-Pacific region. The second case study is at the administrative region scale for the Mekong River Basin and the third case study is at the island scale, for the Pacific island nation of Kiribati.



For more information on the Water Resource Assessment, please contact:

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Republic of Marshall Islands is into Safe Water

How safe is your water? More than one billion people still use unsafe sources of drinking water.

Good quality drinking water is essential for the well being of all people and the United Nations has recently declared access to clean water a basic human right. Unfortunately in many countries around the world, including the Republic of the Marshall Islands (RMI), some drinking water supplies have become contaminated which impacts the health and economic status of the populations. Drinking contaminated water causes water borne illnesses such as dysentery, diarrhoea, typhoid, cholera and hepatitis B.



To prevent the RMI population and tourists from getting water related diseases, the RMI Environmental Protection Agency (EPA) has taken the initiative to conduct a small workshop on water disinfection through chlorination. The target audience for this workshop that was held at the Melele conference room of the Marshall Islands Resort from the 13-14 November 2008 were ice makers and hotels/apartments water superintendents.

During the two day workshop, the participants were exposed to the various disinfection techniques, explained the benefits of chlorination and how to chlorinate their water tanks, reminded the importance of keeping the water supply safe in the first instance before treatment and how to test for free available chlorine in their water tanks. The WQM Programme being implemented by SOPAC and WHO were the sponsors for this important workshop and also provided technical resources during the workshop to assist the RMI EPA laboratory staff facilitate the sessions. The workshop was delivered successfully and it is hoped that the participants put into practice the training that was provided to them to help improve the drinking water quality around Majuro.

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Background on Water in Small Island Countries

The global water community acknowledged the special vulnerability and particular needs of small islands by the inclusion of "Water in Small Islands Countries" as a special theme at the 3rd World Water Forum that was held in Kyoto, Japan from 16-23 March 2003. SOPAC and the Asian Development Bank (ADB) jointly led this Water in Small Island Countries session as well as its preparation through a regional consultation in the Pacific (Sigatoka, Fiji Islands, 2002).

A major outcome of the Pacific regional consultation was the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP), which details priority actions of the water sector in the region. This action plan, endorsed by 18 island countries, 14 at ministerial level, (and 16 countries at Head of State level including Australia and New Zealand) has been incorporated into the Type II Water Partnership Initiative and was submitted by the Pacific Island Countries to the UN Commission for Sustainable Development (CSD) in Johannesburg during the World Summit for Sustainable Development (WSSD) in August 2002.

The objective of this Partnership Initiative is to implement the Pacific Regional Action Plan on Sustainable Water Management, inclusive of its sister strategies, the Pacific Wastewater Policy Statement and the Pacific Wastewater Framework for Action, as effectively as possible.

Over 200 participants were involved in the national and regional consultations and the Water in Small Islands Countries session and they form the core of the Partnership. Now, over 750 individuals have joined this network. Hardcopies of the Regional Action Plan have been distributed to all attendees of Sigatoka and Kyoto and are available from the SOPAC Secretariat. In addition you can obtain more information through the following website:

<http://www.sopac.org/tiki/tiki-index.php?page=Water+in+Small+Islands+Consultations>

Arrangements of the Pacific Type II Partnership Initiative on Sustainable Water Management

The overall aim of the Partnership Initiatives is to ensure coordination and increased partnerships in meeting the WSSD goals through its Plan of Implementation.

The Pacific Partnership Initiative on Sustainable Water Management is coordinated and facilitated by the intergovernmental organisation SOPAC (South Pacific Applied Geoscience Commission), which has the regional mandate to support the Pacific Island Countries in water & sanitation. SOPAC is assisted in this task by a deputy facilitator, the University of the South Pacific (USP).

The Partnership has a Facilitator (based at SOPAC) who is responsible for implementing the core functions of the partnership: liaising between the regional stakeholder groups and their sub-networks; researching and receiving stakeholder information on on-going and planned water activities; tracking donor and development agency programmes; identifying areas requiring implementation; and coordinating proposal submissions and project implementation. The Facilitator is also responsible for high-level advocacy of the strategic approach.

Monitoring and evaluation are carried out using a matrix inventory of previous, existing, planned and proposed activities, including details of the stakeholders involved, the intervention objectives, implementation duration and status, and anticipated impact.

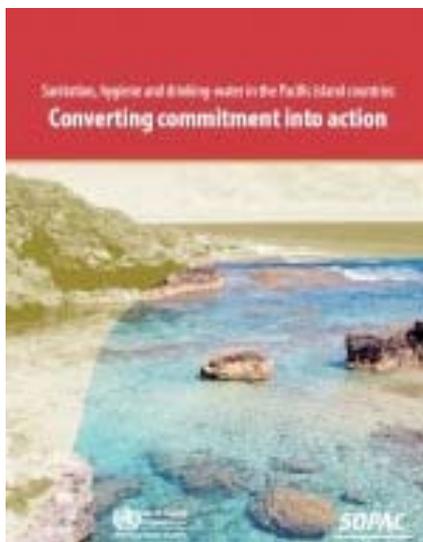
The Facilitator enables countries and development agencies to: identify successful previous activities and therefore improve the sustainability of subsequent interventions; reduce and prevent duplication of activities; link country requirements to development programmes (and vice versa); and augment existing and proposed activities nationally and regionally.

A working group of CROP agencies (Council of Regional Organizations of the Pacific) and NGO representatives has been set up to act as the overall coordinating body of the Pacific Type II Initiatives. Facilitators are asked to report to this Sustainable Development Working Group on a regular basis.

If you have comments on this Initiative or would like to make contributions and be further involved please do not hesitate to contact Marc Overmars marc@sopac.org



Publication



Converting commitment into action – Sanitation, hygiene and drinking water in the Pacific island countries

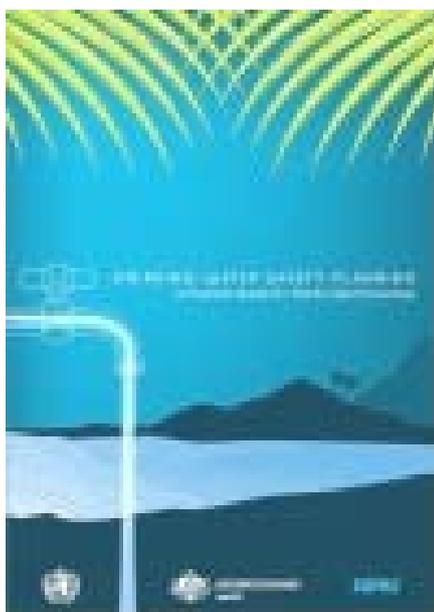
“Converting commitment into action – Sanitation, hygiene and drinking water in the Pacific island countries” provides a concise overview of a sector in need.

Statistics from the WHO and UNICEF Joint Monitoring Programme used in the report reveal persistent and direct impacts on the populations of 14 developing Pacific island countries from water, sanitation and hygiene related diseases.

As of 2006 only 48% of these populations had access to improved sanitation. Water supplies fare no better, with only 46% having access to improved sources of drinking-water, and just 13% having the ‘luxury’ of piped water. According to the report, at least 2,800 deaths each year - the equivalent of nine jumbo jets crashing - are ninety percent attributable to the diarrhoeal diseases which result from poor sanitation, hygiene and drinking water.

This Guide can be downloaded from the PacificWater website:

www.pacificwater.org/pages.cfm/resource-center/sopac-water-publications/



Drinking Water Safety Planning – A Practical Guide for Pacific Island Countries

The ‘Drinking Water Safety Planning – A Practical Guide for Pacific Island Countries’ has been developed to assist drinking water supply operators and managers improve the day-to-day management of the water supply with the objective of producing safe drinking water for consumers.

Drinking Water Safety Planning – A Practical Guide for Pacific Island Countries’ has been developed based on lessons learned and practical experience gained through an AusAID-funded joint SOPAC/WHO programme on drinking water safety planning in Pacific Island Countries. This project involved four pilot countries (Tonga, Cook Islands, Palau and Vanuatu). The lessons learned and approaches used by these countries provide the framework for drinking water safety planning explained in this Guide. The steps and processes described in this Guide are reinforced through case studies from the pilot countries.

This Guide can be downloaded from the PacificWater website:

www.pacificwater.org/pages.cfm/resource-center/sopac-water-publications/



Building partnerships for water and sanitation initiatives in the Pacific Region



Pacific WASH Coalition



The Pacific WASH Coalition supports regional initiatives in the area of water supply, sanitation and hygiene (WASH).

The Pacific WASH Coalition includes the following organisations: Foundation of the Peoples of the South Pacific International (FSPI), the Fiji School of Medicine (FSMed), Live & Learn Environmental Education (LLEE), the World Health Organisation (WHO), the United Nations Children's Funds (UNICEF), International Federation of Red Cross (IFRC) and the Pacific Islands Applied Geoscience Commission (SOPAC).

The Pacific Islands Applied Geoscience Commission based in Suva, Fiji has a regional mandate on water and sanitation and provides a secretarial role within the Pacific as a member of the global Water Supply and Sanitation Collaborative Council (WSSCC).

Jointly the Coalition takes a coordinated approach in addressing the issues of access to safe water supply, adequate sanitation and improved hygiene practices for the people in the Pacific.

The Coalition utilises existing frameworks such as the Pacific Partnership Initiative on Sustainable Water Management, the Pacific Wastewater Framework for Action and the Pacific Framework for Action on Drinking Water Quality and Health to support countries achieving the MDG targets on water and sanitation.

Globally, but also in Pacific island countries, there is a vast need to improve hand washing and sanitation. Eighty-eight per cent of cases of diarrhoeal diseases worldwide are attributable to inadequate sanitation, unsafe water and poor hygiene. In the Pacific island countries, the year 2002 saw the incidence of 871 cases of acute diarrhoea per thousand people, causing the death of 2800 people. More severe forms of diarrhoeal diseases include cholera, typhoid and dysentery.

Pacific Water and Sanitation Flyer

The Pacific WASH Coalition supports regional initiatives in the area of water supply, sanitation and hygiene (WASH).

The Pacific WASH Coalition includes the following organisations: Foundation of the Peoples of the South Pacific International (FSPI), the Fiji School of Medicine (FSMed), Live & Learn Environmental Education (LLEE), the World Health Organisation (WHO), the United Nations Children's Funds (UNICEF), International Federation of Red Cross (IFRC) and the Pacific Islands Applied Geoscience Commission (SOPAC).

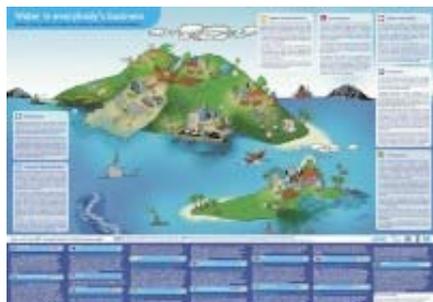
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The Pacific Water and Sanitation Flyer can be downloaded from the PacificWater website:

www.pacificwater.org/pages.cfm/news?newsid=pacific-wash-coalition



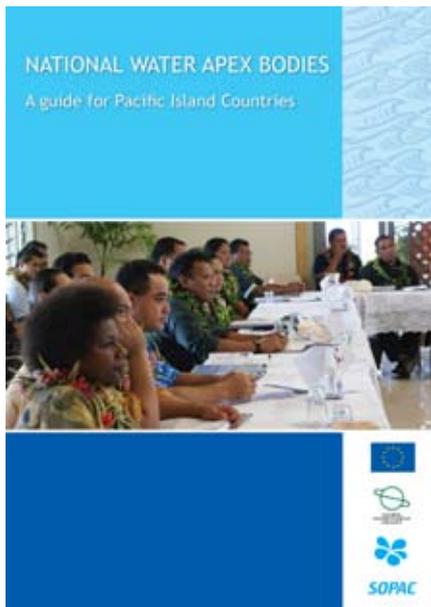
The Pacific Integrated Water Resource Management Programme Brochure

A brief colourful overview of Integrated Water Resources Management (IWRM) and the aims and activities of the Pacific IWRM programme.

Hard copies of the IWRM brochure are available on request via iwrm@sopac.org or can be downloaded from the IWRM website:

www.sopac.org/tiki/tiki-index.php?page=IWRM+Outputs





National Water Apex Bodies – a guide for Pacific Island Countries

This is a brief introduction to some of the key issues and steps to be considered in the establishment and strengthening of National Water Apex Bodies (NWABs) in Pacific Island Countries. It endeavours to give the reader some initial advice on questions such as:

- ❁ What is the point of establishing an NWAB in the first place?
- ❁ Who should be involved in the NWAB and how do you involve them?
- ❁ How do you run the day-to-day work of the NWAB in order to achieve national goals and to ensure impact on the ground?

More specifically, the guide aims to help national civil servants involved in strengthening NWABs to draft or revise Terms of Reference for their National Water Apex Bodies in order to support reform towards integrated water resources management. For this purpose, the guide includes a checklist for Terms of Reference as Annex 1.

The guide has been put together by SOPAC with funding from the European Union as part of the Pacific IWRM Programme, and is based on issues emerging from the process of developing national diagnostic analyses on IWRM and from the IWRM Planning Meeting held in Niue in July 2008.

This is a first edition and should not be seen as a complete review but rather a brief introduction to the basics. Feedback on the content and the usefulness of this guide, and suggestions for how to improve it, are gratefully received by iwrm@sopac.org



IWRM Community Mobilisation Guidelines

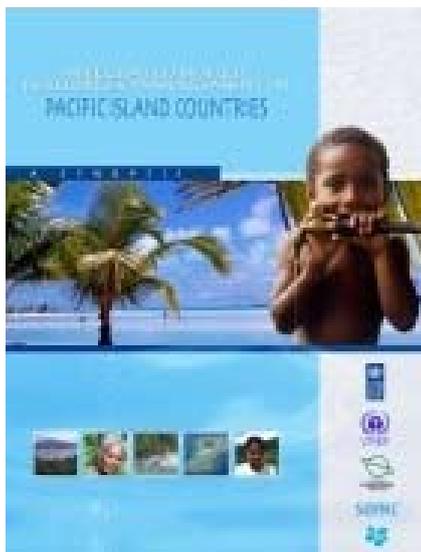
The final Community Mobilisation Guidelines to help assist communities and facilitators working with them to look at IWRM approaches at a village and community level are now available.

Developed by Live and Learn Environment Education, supported by SOPAC and UNDP and UNEP, the guidelines are a key output from the Project Design phase of the Sustainable Integrated Water and Wastewater Management project supported by the Global Environment Facility. This project will work with 14 countries in the Pacific starting in 2008. Through a network of national Demonstration Projects supported by regional capacity building components the project aims to raise awareness on IWRM approaches and strengthen national and regional approaches to integrate improved water management in the water sector and into wider national and community interventions.

The **IWRM Community Mobilisation Guidelines** is available on SOPAC website for download:

<http://www.sopac.org/tiki/tiki-index.php?page=CLP+Publications>



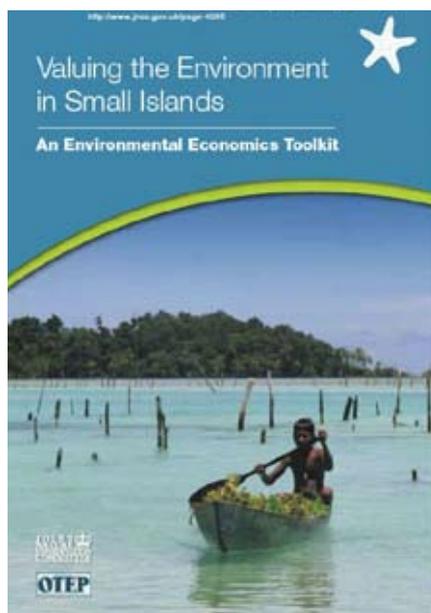


Integrated Water Resource Management in Pacific Island Countries A Synopsis

Under the Global Environment Facility funded Integrated Water Resources and Wastewater Management Project 14 countries of the Pacific Region prepared detailed Diagnostic Reports summarising the status of their water resources and assessing the barriers to implementing Integrated Water Resource Management (IWRM) approaches in their respective countries. This Synopsis report represents a summary of the 14 Diagnostic Reports, providing a baseline status of IWRM approaches in country. It will provide a useful monitoring report over the coming years as countries start to implement IWRM approaches. The report provides some simple solutions to achieving IWRM in small island environments.

Copies of the **Synopsis Report** are available directly from SOPAC, or can be downloaded from the IWRM website:

<http://www.sopac.org/tiki/tiki-index.php?page=IWRM+Outputs>



Valuing the Environment in Small Islands

Although a large number of guides already exist on aspects of environmental valuation, none of these references specifically focus on the issues and needs of small islands. This toolkit was developed to address this gap. Its core aim is to provide a practical resource to meet the pressing needs of a group of pioneering stakeholders in Bermuda, the Cayman Islands and Montserrat who will lead valuation studies, but have no, or only limited, knowledge of environmental economics. In addition, the toolkit is designed to be of use to a wider audience of stakeholders in small islands around the world who wish to learn about practical aspects of environmental valuation, but struggle to find a reference adapted to small island contexts.

The development of this toolkit was jointly funded by OTEP and the Joint Nature Conservation Committee (JNCC). OTEP is a joint programme of the UK Government Foreign and Commonwealth Office and the Department for International Development to support the implementation of the Environment Charters and environmental management more generally in the UK Overseas Territories. JNCC is the statutory adviser to the UK Government on UK and international nature conservation, including in the UK Overseas Territories.

http://www.jncc.gov.uk/pdf/pub07_environmental%20toolkitcp1-3.pdf

For more details on the UK Overseas Territories valuation projects please visit the following website:

<http://www.ukotcf.org/OTEP/docs/OTEP2007PROJECTS.pdf>

For more details on the UK Overseas Territories Environment Charters please visit:

http://www.ukotcf.org/OTEP/docs/general_brochure.pdf





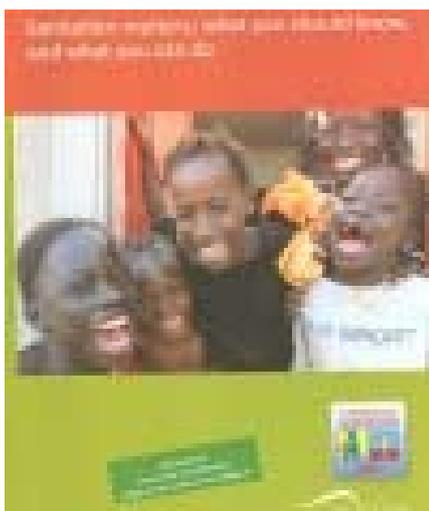
Designing A Drinking Water Quality Monitoring Programme "A Practical Guide for the Pacific Island Countries"

Contamination of drinking water is a significant concern for public health throughout the world. It is important for Pacific island countries (PICs) to identify, prioritize and analyse water quality parameters that are of greatest risk to human health. This will ensure that viable and useful information on the status of drinking water quality is achieved within the existing resources (budget, staff and laboratory capacity).

This guide provides the opportunity and direction for Pacific Island Countries (PICs) to design a feasible and useful drinking water quality monitoring programme that is conscious of their existing, and in some instances limited, resources. It is aimed at assisting agencies involved with water quality monitoring roles design a practical and workable monitoring programme for their country and purpose.

The Guide has been produced and published under the NZAID-funded Pacific Water Quality Monitoring Capacity Building (WQM) Programme which is being implemented by the Pacific Islands Applied Geoscience Commission (SOPAC), the World Health Organization (WHO) and the Institute of Applied Sciences of the University of the South Pacific (IAS-USP).

For copies of the guide please contact SOPAC Water Quality Programme Officer (tasleem@sopac.org)



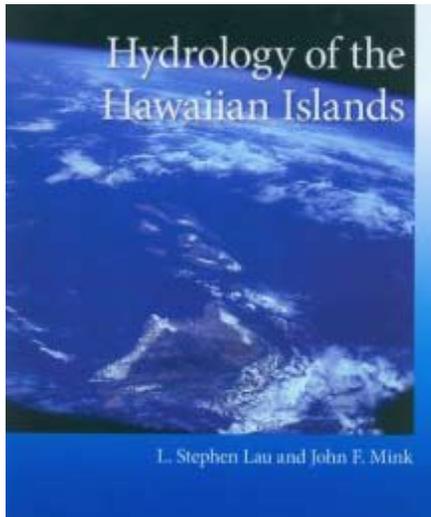
Sanitation matters: what you should know, and what you can do Advocacy kit

2008 is the International year of Sanitation. This kit is designed to further specific goals of the year, namely to increase awareness about the sanitation crisis as well as to secure commitments and mobilize action from the government and other stakeholders to address this global emergency.

The kit contains a **booklet** that summarizes briefly why sanitation matters, detailed **fact sheet** on the links between sanitation and health, economic development, social development and dignity, and environment, a **matrix** that demonstrates clearly that the sanitation crisis affects everyone and that everyone can contribute to solving it, a **list of useful websites, talking points** on sanitation, and a **poster**. Journalists and others in the media will also receive in their kit **recorded interviews** (as well as **transcripts**) with leading experts that can be used in radio or print stories as well as **photographs** and various **figures** that can be reproduced. Professional; campaigners will find an **advocacy guide** in their kit.

For more information on the kit and its content, contact the Water Supply and Sanitation Collaborative Council (WSSCC), Geneva, Switzerland, wsscc@who.int.



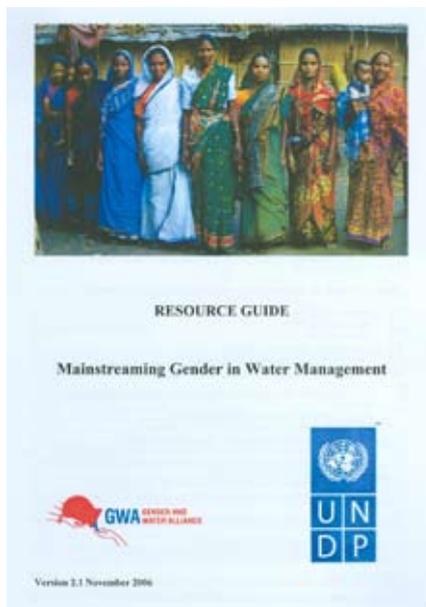


Hydrology of the Hawaiian Islands

Why is groundwater the predominant drinking water source in Hawaii? Why are groundwater sources susceptible to pesticide contamination? How long does it take for water in the mountains to journey by land and underground passages to reach the coast? Answers to questions such as these are essential to understanding the principles of hydrology—the science of the movement, distribution, and quality of water—in Hawaii. Due to the humid tropical climate, surrounding ocean, volcanic earth, and high mountains, many hydrologic processes in the Islands are profoundly different from those of large continents and other climatic zones. Management of water, land, and environment must be informed by appropriate analyses, or communities and ecosystems face great uncertainty and may be at risk. The protection of groundwater, coastal waters, and streams from pollution and the management of flood hazards are also significant. This volume presents applications of hydrology to these critical issues.

The authors begin by outlining fundamental hydrologic theories and the current general knowledge then expand into a formal discussion specific to Hawaii and the distinctive elements and their interrelations under natural and human-influenced conditions. They include chapters on rainfall and climate, evaporation, groundwater, and surface runoff. Details on the quantification of hydrologic processes are available to those with more technical knowledge, but general readers with an interest in the topic—one of singular importance for the Hawaiian Islands—will find much in the volume that is timely and accessible.

For further information on **Hydrology of the Hawaiian Islands** please visit the following link: www.uhpress.hawaii.edu/cart/shopcore/?db_name=uhpress&page=shop/flypage&product_id=4226

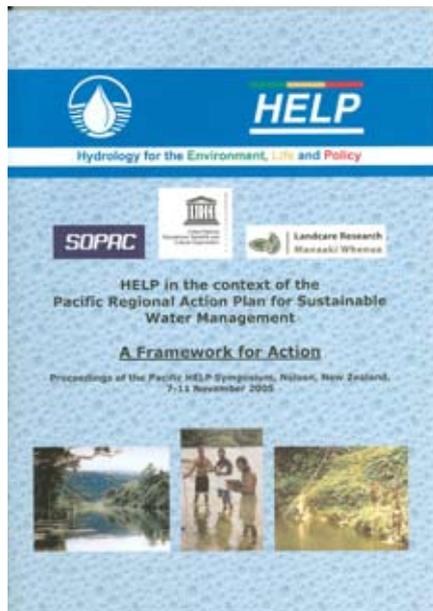


Resource Guide - Mainstreaming Gender in Water Management

This is the second edition of the Resource Guide on Mainstreaming Gender in Water Management of August 2006, which was first published by the United Nations Development Programme (UNDP) in 2003. The Guide is a reference document to assist water and gender practitioners and professionals as well as persons responsible for gender mainstreaming, and anybody else who is interested in the water sector. It is a compilation of newer resources – documents, papers, books, case studies, tools and toolkits - on gender mainstreaming in Integrated Water Resource Management (IWRM). It is meant to support action and further reading and research.

For the regular updating of the website version of the **Resource Guide** please visit the following website: www.genderandwater.org/





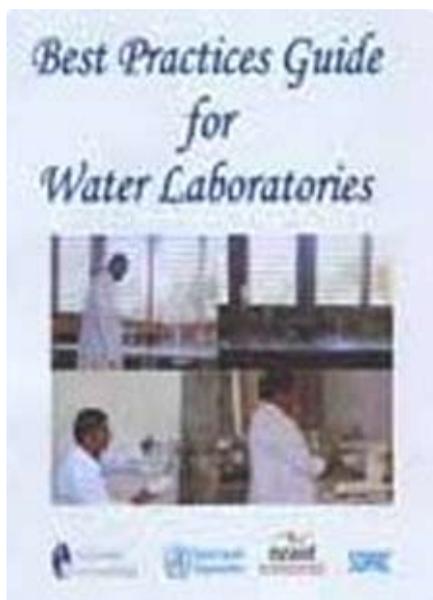
Hydrology for the Environment, Life & Policy

HELP (**Hydrology for the Environment, Life & Policy**) is a joint initiative of the United Nations Educational Scientific Organization (UNESCO) and the World Meteorological Organization (WMO). HELP is led and coordinated by UNESCO's International Hydrological Programme (IHP). In the Pacific, the IHP is administered by the UNESCO Office for the Pacific States in Apia, Samoa, through a memorandum of understanding with the South Pacific Applied Geoscience Commission (SOPAC).

Under the title "HELP in the context of the Pacific Regional Action Plan for Sustainable Water Management: A Framework for Action", the proceedings of the Pacific HELP Symposium were prepared in response to the recommendations by the Pacific Island country participants and supports the implementation of catchment management actions envisioned in the overarching Pacific Regional Action Plan on Sustainable Water Management.

This document consists of the Framework for Action itself, as well as a CD-Rom containing electronic editions of all presentations and papers delivered at the HELP Symposium.

Participating Pacific Island Countries in the HELP Symposium: Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands and Vanuatu.



Best Practices Guide for Water Laboratories

The guide is prepared as part of the NZAID-funded Pacific Water Quality Monitoring Capacity Building Programme that is being implemented by SOPAC, WHO and IAS-USP. It is intended to be a resource guide for small PIC water laboratories on best practices that can be employed in water laboratories.

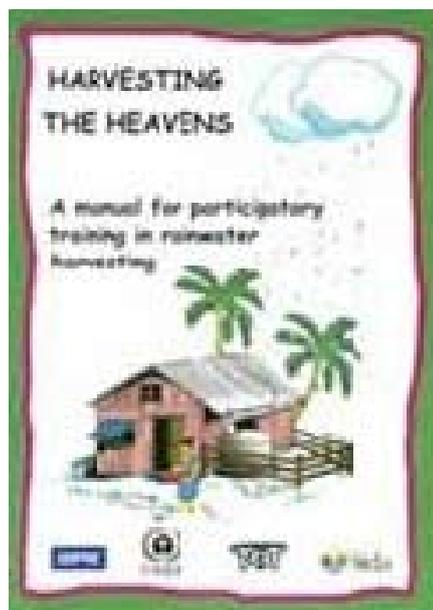
The Guide is comprises two parts:

Part 1 - outlines the 10 keys features that an ideal water quality monitoring laboratory is recommended to have in order to successfully conduct its role.

Part 2 - outlines other aspects that are to be addressed in supporting the development of a water monitoring laboratory.

For more information on the guide or to obtain copies, please contact **SOPAC Secretariat** (tasleem@sopac.org).





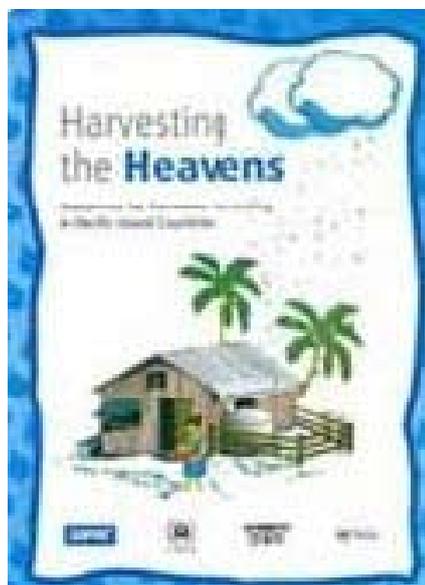
Participatory Training in rainwater Harvesting

This manual of **Participatory Training in rainwater Harvesting** was developed as part of the United Nations Environment Programme (UNEP) project titled "Pilot Project on Empowering Women in Rainwater Harvesting in the Pacific Atoll Islands" with funding from the Government of Sweden.

The manual is targeted for use by Non-Government Organisations (NGOs), Community-Based Organisations (CBOs) or people involved in rainwater harvesting, and contains a number of participatory techniques, tools and activities based on best practices from a variety of sources.

Copies of this Manual can be obtained from the **SOPAC Secretariat** (arieta@sopac.org) or you can download the document via the following website:

<http://www.sopac.org/CLP+Rainwater+Harvesting>



Harvesting the Heavens: Guidelines for the Rainwater Harvesting in the Pacific Island Countries

The "**Harvesting the Heavens: Guidelines for the Rainwater Harvesting in the Pacific Island Countries**" were developed as part of the United Nations Environment Programme (UNEP) demonstration projects on "Empowering Women in Rainwater Harvesting" funded by the Government of Sweden through their development agency SIDA and carried out in Africa (Kenya) and the Pacific (Tonga).

The guidelines capture the lessons learned during the preparation and the implementation of the demonstration project executed by the South Pacific Applied Geoscience Commission (SOPAC) and carried out in the Island group of Vava'u of the Kingdom of Tonga through the Village Women's Development Programme (VWDP) of the Tonga community Development Trust (TCDT).

Copies of this Guideline can be obtained from the **SOPAC Secretariat** (arieta@sopac.org) or you can download the document via the following website:

<http://www.sopac.org/CLP+Rainwater+Harvesting>





Pacific Regional Action Plan

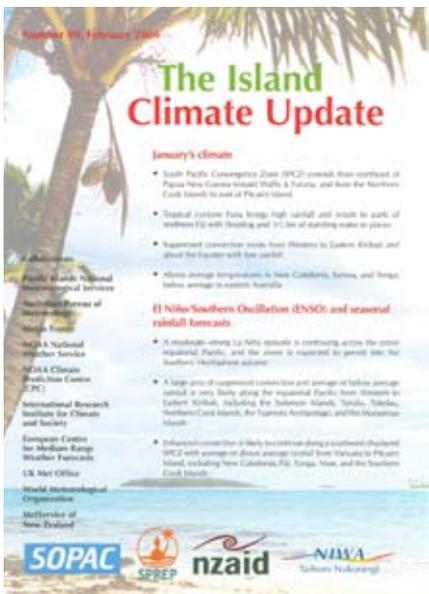


National consultations as well as a regional meeting held in Sigatoka, Fiji from 29 July – 3 August 2002 provided a platform through which participants translated ideas into decisions and policy changes on water and sanitation resulting in the Pacific Regional Action Plan on Sustainable Water Management (Pacific RAP).

The outcomes of the consultation were carried forward and presented during the 3rd World Water Forum in Kyoto as part of the theme "Water in Small Island Countries".

Copies of the **Pacific Regional Action Plan** can be obtained from the **SOPAC Secretariat** (kamal@sopac.org) or you can download the document via the following website:

<http://www.sopac.org/CLP+Publications>



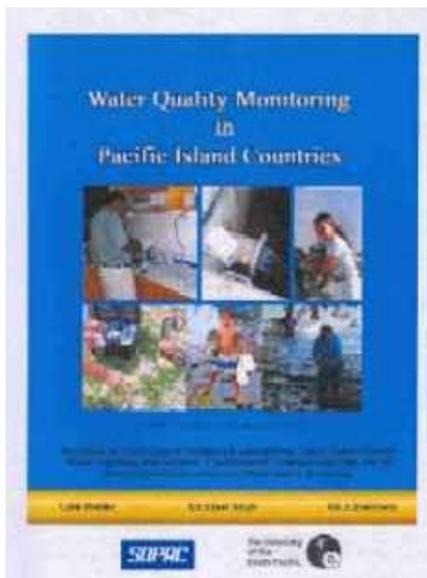
ICU bulletin

Contamination of drinking water is a significant concern for public The ICU is a multi-disciplinary, multi-national project providing Pacific island countries with 3-month climate forecasts. It is published monthly both in print and online by the National Institute of Water and Atmospheric Research (NIWA) in New Zealand and is funded by NZAID. Every month, 1200 printed copies of the ICU are distributed free-of-charge by NIWA, the publisher, directly to subscribers.

Online versions of the **ICU bulletin** can be downloaded from the following **NIWA ICU** website:

<http://www.niwascience.co.nz/ncc/icu/archive>





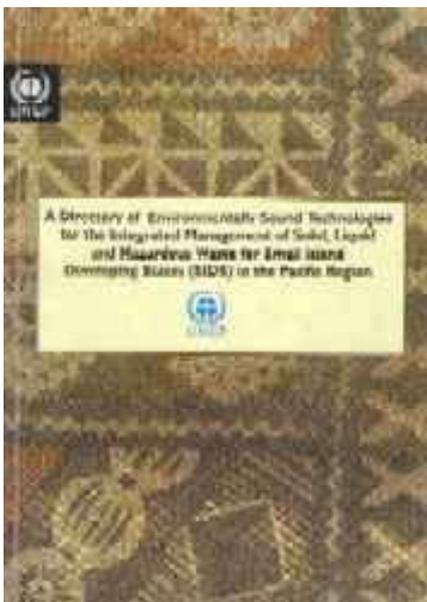
Water Quality Monitoring in Pacific Island Countries

The Water Quality Monitoring in the picture is the first of its kind guideline that has been developed by the Institute of Applied (IAS) of the University of the South Pacific (USP) and the South Pacific Applied Geoscience Commission (SOPAC). The publication is divided into sections on how to design a water quality monitoring programme; selection of drinking and recreational water sampling; solid and liquid waste management and general notes on sampling and laboratory procedures.

This handbook is aimed for those people working in the water and wastewater sectors in the Pacific region, with local examples to allow more understanding and adaptation.

Copies of the **Water Quality Monitoring in Pacific Island Countries** can be obtained from the **SOPAC Secretariat** (tasleem@sopac.org) or you can download the document via the following website:

www.sopac.org/tiki/tiki-sopac_download.php?path=/data/virlib/TR/TR0381.pdf&file=TR0381.pdf&loc=TR



Directory of Environmentally Sound Technologies for the Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States (SIDS) in the Pacific Region

The Directory of Environmentally Sound Technologies for the Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States (SIDS) in the Pacific Region represents the combined efforts and achievement of numerous people from UNEP, SOPAC and SPREP.

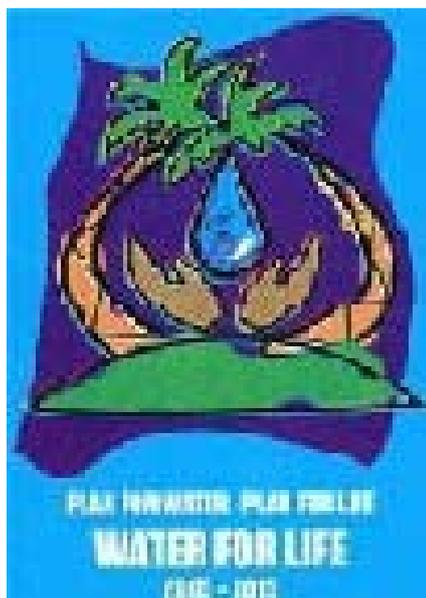
The directory provides an overview of solid, hazardous and wastewater technologies.

- Solid waste technologies - discuss information on different municipal solid waste management (MSWM) technologies that are currently used in different regions of the world.
- Hazardous Waste Technologies - addresses the proper management of various types of hazardous wastes, as they require special handling, treatment and disposal due to their hazardous potential.
- Liquid waste or wastewater technologies - in SIDS wastewater disposal systems are just as important for public health as a water supply distribution system.

Copies of the **Directory of Environmentally Sound Technologies for the Integrated Management of Solid, Liquid and Hazardous Waste for Small Island Developing States (SIDS) in the Pacific Region** are available from the **SOPAC Secretariat** (kamal@sopac.org) or you can download the document via the following website:

www.sopac.org/tiki/tiki-sopac_download.php?path=/data/virlib/JC/JC0143.pdf&file=JC0143.pdf&loc=JC



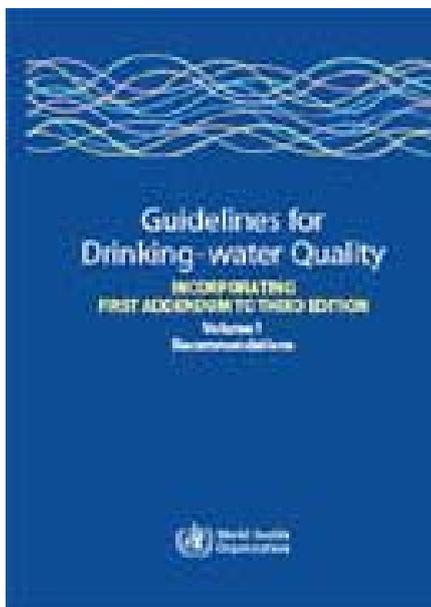


World Water Day Campaign

The World Water Day "Water for Life 2005-2015" Activity Booklet has been produced for schools and communities to further consider water issues through participative activities. The Activity Booklet should be used with the Water for Life Cartoon Scenes on the posters or calendars as the activities are linked to each cartoon scene. Alternatively, it can be used on its own to address different components of the theme "Water for Life".

Copies of the **World Water Day Campaign** are available from the **SOPAC Secretariat** (kamal@sopac.org) or **Live & Learn Environment Education** (marie@livelearn.org.fj). You can also download the document via the following website:

<http://www.sopac.org/WWD+2007>



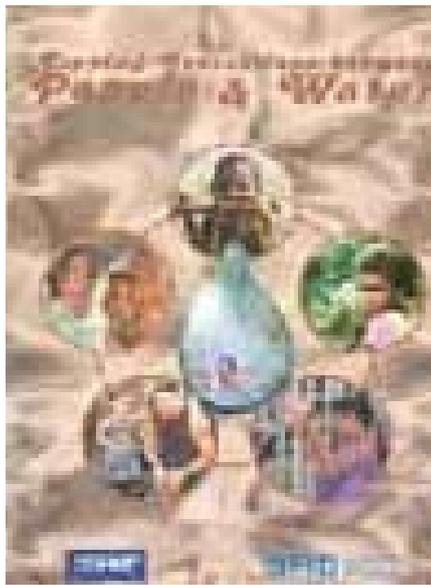
Guidelines for Drinking - Water Quality

Since the second edition of WHO's Guidelines for Drinking water Quality, there have been a number of events that have highlighted the importance and furthered understanding of various aspects of drinking-water quality and health. These are reflected in this 3rd edition of the Guidelines.

The Guidelines are addressed primarily to water and health regulators, policy-makers and their advisors, to assist in the development of national standards. The Guidelines and associated document are also used by many others as a source of information on water quality and health and on effective management approaches.

Copies of the **Guidelines for Drinking - Water Quality** are available from **WHO's website**: http://www.who.int/water_sanitation_health/dwq/gdwq3/en/ or from the **WHO's Pacific Regional Office** (IddingsS@sp.wpro.who.int).





Tapping Water Connections

Everyone uses water and everyone needs some kind of sanitation. The way water is used depends on the island where you live: the climate, the landforms, and the source of water. It also depends on the tradition and customs of the family and community, their income and the size of the population.

The handbook **"Tapping Water Connections"** can be used by field workers when working with communities to install and maintain water and sanitation systems. It can also be used to support health and hygiene programmes. The handbook raises seven Questions to think about. The Questions can be a checklist to identify important connections between people and their water and their land.

Copies of the Manual can be obtained from the **SOPAC Secretariat** (arieta@sopac.org) or you can download the document via the following website:

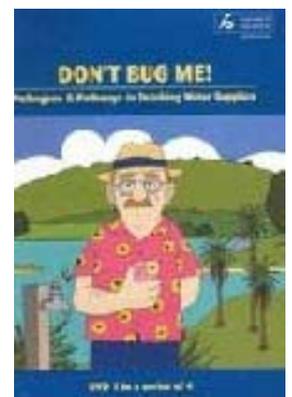
<http://www.sopac.org/data/virlib/MR/MR0577.pdf>

Multimedia

Don't Bug Me? – Pathogens and Pathways in Drinking Water Supplies

This is the DVD 1 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans programme as public awareness material. This video informs on the access and presence of pathogens in the drinking water supplies. It is intended for the small drinking water supplies and can be used in the Pacific Island Countries.

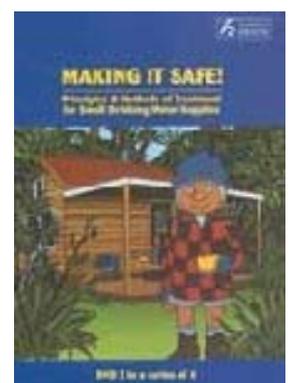
Copies of this documentary are available from New Zealand , Ministry of Health.



Making It Safe? - Principles and Methods of Treatment for Small Drinking Water Supplies

This is the DVD 2 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans Programme as public awareness material. This video informs on the principles and methods of treatment for small drinking water supplies. It can be used for educating the pacific island communities as well.

Copies of this documentary are available from New Zealand Ministry of Health.

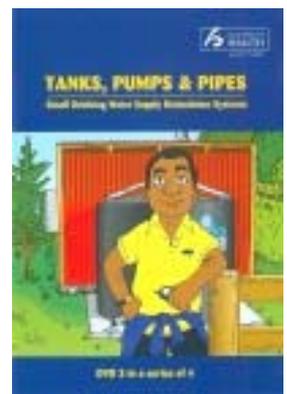




Tanks, Pumps & Pipes - Small Drinking Water Supply Reticulation Systems

This is the DVD 3 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans Programme as public awareness material. This video informs on reticulation system for small drinking water supplies. It can be used for educating the pacific island communities as well.

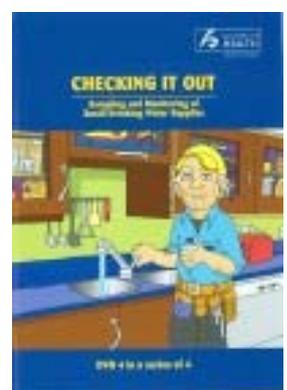
Copies of this documentary are available from New Zealand Ministry of Health.



Checking it Out - Sampling and Monitoring of Small Drinking Water Supplies

This is the DVD 4 of the four series produced by New Zealand Ministry of Health and can be used in the Water Safety Plans Programme as public awareness material. This video provides information on the sampling and monitoring of small drinking water supplies. It can be used for educating the pacific island communities as well.

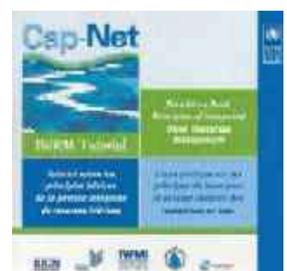
Copies of this documentary are available from New Zealand Ministry of Health.



Cap-Net - IWRM Tutorial

This DVD contains a brief introductory tutorial aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principle. It provides the case for IWRM and the argument against those who may oppose it on institutional or sectoral grounds.

Copies of the **Cap-Net - IWRM Tutorial DVD** can be obtained from the **United Nations Development Programme**.



Toolbox

This DVD contains a brief introductory tutorial aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principle. It provides the case for IWRM and the argument against those who may oppose it on institutional or sectoral grounds.

Copies of the **Toolbox DVD** can be obtained from the **Global Water Partnership Secretariat**.



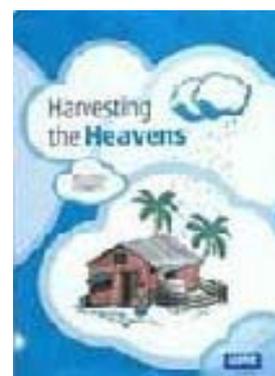


Harvesting the Heavens

A DVD documentary which follows the pilot project in Vava'u. The video highlights the important aspects of the project including community participation and ownership, encouraging women as well as men to participate in water management and promoting sustainable approaches. Harvesting the Heavens follows a rainwater harvesting demonstration project carried out in the villages of 'Utungake and Matamaka in the island group of Vava'u in Tonga. The project focused on the importance of community participation and ownership, encouraging women as well as men to participate in water management and promoting sustainable approaches.

Copies of the **Harvesting the Heavens documentary** can be obtained from the **SOPAC Secretariat** (kamal@sopac.org) or you can download the document via the following website:

<http://www.sopac.org/CLP+Rainwater+Harvesting>



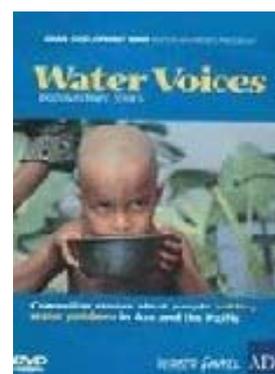
Water Voices Documentary Series

Water is essential to all life. And yet one in three Asians lacks access to safe drinking water, and half the people living in Asia and the Pacific do not have access to adequate sanitation. Conflicts over sharing of scarce water resources are increasing at an alarming rate.

A documentary series that recognizes the power of good examples and lessons learned to inspire 'home grown' solutions to water problems. The series recognizes the power of good examples and lessons learned to inspire 'home grown' solutions to water problems and looks specifically at communities in Fiji, Kiribati and Tonga.

Copies of this documentary can be obtained from the **SOPAC Secretariat** (arieta@sopac.org) or the **Asian Development Bank**

http://www.adb.org/Water/CFWS/Water_Voices_Videos.asp

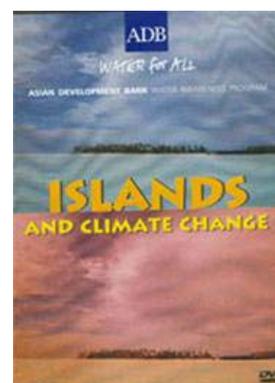


Islands and Climate Change

Islands and Climate Change examines and reports on a unique initiative on Fiji's Coral Coast where coastal communities and the tourist industry try to protect water resources. The Water Awareness Program aims to increase public understanding about vital water issues in the Asia and Pacific region; promote water sector reform; improve delivery of water services, especially to the poor; and foster conservation and integrated management of water resources.

Copies of this documentary can be obtained from the **SOPAC Secretariat** (arieta@sopac.org) or the **Asian Development Bank**.

http://www.adb.org/Water/CFWS/Water_Voices_Videos.asp



Pacific Water Agenda 2008

| DATE | EVENT | LOCATION | DETAILS |
|---------------------------------|---|--|---|
| October 21st - 30th | SOPAC Annual Session and STAR Water Working Group Meeting | Funafuti, Tuvalu | For more information on SOPAC Annual Session and STAR Working Group please visit: www.sopac.org/Annual%20Session%202008-Tuvalu |
| October 27th - 29th | An international conference hosted by World Vision Australia and supported by the Australian Government, AusAID | The Langham Hotel, Southbank, Melbourne, Australia | The conference will seek to review the status of sanitation and water in East Asia and the Pacific region, review best practice and key entry points and devise actions and approaches that can best provide large scale sustainable solutions with a view to achieving the Millennium Development Goals. The conference will also provide a forum for AusAID to discuss its increased focus on water and sanitation. |
| November 17th - 21st | Coastal Cities Summit 2008 | St Petersburg, Florida, USA | One of the most challenging issues facing the ocean today is rapid coastal urbanization whose implications have yet to be assessed. Today, the majority of the world's population lives within sixty kilometres of the coast line and this is steadily increasing. This profound demographic shift has significant implications for the coastal environment, inhabitants and ecosystem stability. www.coastalcities.org/ |
| November 19th | World Toilet Day | International | World Toilet Organization (WTO) is a global non- profit organization committed to improving toilet and sanitation conditions worldwide. Please visit: http://www.worldtoilet.org/ |
| December 3rd | Advisory Committee Meeting for WQM | SOPAC | To discuss implementation of the WQM Programme over the last 2.5 years. To decide on workplan for remainder of programme. Key stakeholders present will be NZAID, WHO, IAS-USP and SOPAC. |
| December 3rd - 5th | Third & Final Seminar on Water management in islands Coastal and Isolation areas | Hawaii | An International PECC Project jointly organized by FPTPECC , the East-West Center and the World Water Forum |
| December 4th - 5th | 5WWF Preparation Meeting | Geneva, Switzerland | 2nd Preparatory Committee Meeting (PrepCom) of the Ministerial Process. For more information please visit: www.worldwaterforum5.org |

Selected Water Websites

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| ADB Water in Small Island Countries www.adb.org/Water/theme3.asp | Pacific ENSO Update http://lumahai.soest.hawaii.edu/Enso/subdir/update.dir/update.html |
| AOSIS Alliance of Small Island States www.sidsnet.org/aosis | Pacific Water Association www.pwa.org.fj |
| AUSAID www.usaid.gov.au | SIDSNET www.sidsnet.org |
| Australian Water Portal www.developmentgateway.com.au/water/index.html | UNEP http://freshwater.unep.net/ |
| Barbados +10 www.sidsnet.org/Mauritius2004/ | UNESCAP www.unescap.org |
| CSD12 www.un.org/esa/sustdev/csd/csd12/csd12.htm | UNESCO www.unesco.org/water |
| CSD13 http://www.un.org/esa/sustdev/partnerships/csd13_partnership_fair.htm | UNU www.inweh.unu.edu/inweh |
| Co-operative Programme on Water and Climate www.waterandclimate.org | WHO www.who.int/water_sanitation_health/en/ |
| East-West Centre www.EastWestCenter.org/climate | WMO www.wmo.ch/web/homs/index.html |
| ESCAP www.unescap.org/esd/water/activities | World Bank www.worldbank.org/html/fpd/water |
| European Union www.europa.eu.int/comm/development/publicat/water/en/frontpage_en.htm www.euwi.net | SOPAC Water www.pacificwater.org |
| Gender and Water Alliance www.genderandwateralliance.org | World Water Council www.worldwatercouncil.org |
| Global Water Partnership www.gwpforum.org | USP www.usp.ac.fj |
| GWP Australia www.gwpaustralia.org | WSSCC http://www.wsscc.org/ |
| Island Climate Update www.niwa.cri.nz/NCC/ICU | NIWA www.niwa.co.nz |
| NZAID www.nzaid.govt.nz | SPC www.spc.int |
| USGS http://hi.water.usgs.gov | Japan Water Forum http://www.waterforum.jp/eng/index.html |
| Water Virtual Learning Centre (WVLC), University of the South Pacific www.earth.fst.usp.ac.fj/index.php?id=4043 | UN-Water http://www.un.org/waterforlifedecade/ |
| World Summit on Sustainable Development www.johannesburgsummit.org | World Wide Fund for Nature www.wwfpacific.org.fj |
| International Commission on Irrigation and Drainage http://www.icid.org | Cap - Net www.cap-net.org/ |
| Climate Front Lines www.climatefrontlines.org | PI-GOOS www.pi-goos.org |

--- Please let us know if you think other websites are worth mentioning here! ---

We have changed the frequency of issuing this newsletter from semi-annually to quarterly so you can be kept updated on the latest developments. As mentioned in earlier mail outs we would appreciate it if you could forward this to colleagues who may be interested in this initiative so that it reaches the widest possible audience.

To subscribe please send an email to sanjeshni@sopac.org to add your contact to our mailing list. and

Send a blank email message with the words

"unsubscribe" in the subject field to: sanjeshni@sopac.org to unsubscribe from this list if you wish not to receive any further issues in the future.

The Pacific Water Partnership Initiative News is produced by the Pacific Partnership Initiative on Sustainable Water Management for Water Awareness Program to provide water information to Pacific member governments, professionals, researchers, private sector and their counterparts in the donor community who are interested in water sector issues and initiatives.

For comments or more information:

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